SONY

PXW-X70

1.0-type CMOS Compact Solid-State Memory Camcorder

XDCAM XAVC AVCHD Progressive Exmor R CMOS Sensor Wi Fi CERTIFIED Multi Interface Shoe 4K *

* 3840 x 2160 pixels

This handheld camcorder is a new compact member of the XDCAM family, delivering the benefits of 1.0-type sensor technology and XAVC.

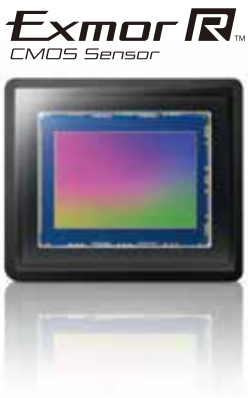
The PXW-X70 is a compact, lightweight XDCAM camcorder with professional features including a high-sensitivity 1.0-type CMOS image sensor. It delivers high-resolution recording and superb performance even in low-light conditions and can record in various formats — including QFHD XAVC Long GOP (for 420 8-bit sampling)*, HD XAVC Long GOP (for 422 10-bit sampling), AVCHD, and DV® — to meet particular needs. Furthermore, XAVC proxy recording is available from version 2.0. The lens features 12x Optical Zoom, which can be increased to 24x via Clear Image Zoom in HD recording modes (18x in 4K recording modes) while retaining full resolution. Thanks to the 20-megapixel CMOS sensor and Sony's sophisticated Digital Extender, zoom performance can be further increased to 48x in HD recording modes to satisfy the demand of professionals for wide-angle to telephoto shooting in various scenes. As for network function, streaming and ftp transferring are newly supported from version 2.0 by built-in Wi-Fi function. The rich feature set includes a four position switchable ND filter, 3G-SDI interface, XLR handle unit.

* 4K recording requires purchase of the 4K Upgrade License (CBKZ-X70FX).

1.0-type Exmor® R CMOS Sensor with a Resolution of 20 Megapixels

The Exmor R CMOS sensor with 1.0-type picture elements delivers high resolution and minimal noise even when shooting in low-light conditions. Also, 1.0-type sensor is large sensor, almost the same size as a Super 16 mm sensor; therefore it can adjust depth of field easier than 1/3-type sensor. The 20-megapixel sensor comfortably supports 4K resolution, and 4K recording becomes available via firmware update*.

* 4K upgrade license (paid option) is required for 4K recording.



Option 4K Upgrade License "CBKZ-X70FX"

The CBKZ-X70FX Upgrade License provides support for QFHD shooting at 30p/25p/24p, allowing the PXW-X70 to capture scenes with stunning quality and at high resolution*. Furthermore, for projects finalized in HD, 4K recording greatly expands the creative possibilities by enabling digital panning, camera-shake correction and other post-production effects.

* Firmware version 2.0 is required for use of the Upgrade License.

29-mm Wide-angle Carl Zeiss Vario-Sonnar T* Lens with 12x Optical Zoom (Maximum 48x Zoom in HD recording modes)

The wide-angle 29-mm ZEISS Vario-Sonnar T* lens ensures stunning quality to the very corners of the image and offers 12x optical zooming that can be increased to 24x in HD recording modes and 18x in 4K recording modes via Clear Image Zoom. Magnification can be further increased to 48x by Digital Extender in HD recording modes, which takes full advantage of the 20-megapixel high-resolution image sensor. From wide-angle to telephoto shooting, this lens enables various professional level applications. Moreover, seven shutter blades contribute to impressive background bokeh.

29mm Wide End

522mm: Clear Image Zoom
(Maximum Focal Length in 4K Shooting Modes)

Wide Variety of Recording Format Capabilities Including XAVC Long GOP (MXF)

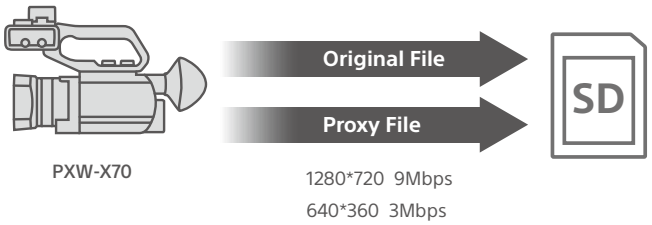
The PXW-X70 provides multiple choices depending on the application required, including XAVC, AVCHD, and DV® file based recording. When recording in XAVC, the PXW-X70 uses the MXF file format, efficiently compressing full HD (1920 x 1080) resolution using the MPEG-4 AVC/H.264 CODEC. Image sampling is 4:2:2 10-bit with high-efficiency Long GOP compression at 50 Mbps, 35 Mbps, or 25 Mbps. By applying the 4K upgrade license, PXW-X70 newly supports QFHD (3840 x 2160) recording in XAVC Long GOP 4:2:0 8bit by MXF file format. Moreover, the ability to record in AVCHD format, which is widely used already, provides playback compatibility with wide range of consumer electronics equipment. A firmware update in the near future will also enable recording of proxy video files.

XAVC

AVCHD Progressive

New XAVC Proxy Recording

Proxy recording supports the use of a low-bit-rate video file in place of an XAVC format, high-bit-rate file with the same time code. The low-bit-rate proxy file, being smaller in size, can be used in many ways to increase efficiency. For example, the smaller file can be more easily transmitted to remote locations, while editing is greatly facilitated by the use of the smaller file, which is replaced at the completion of editing with the high-bit-rate file.

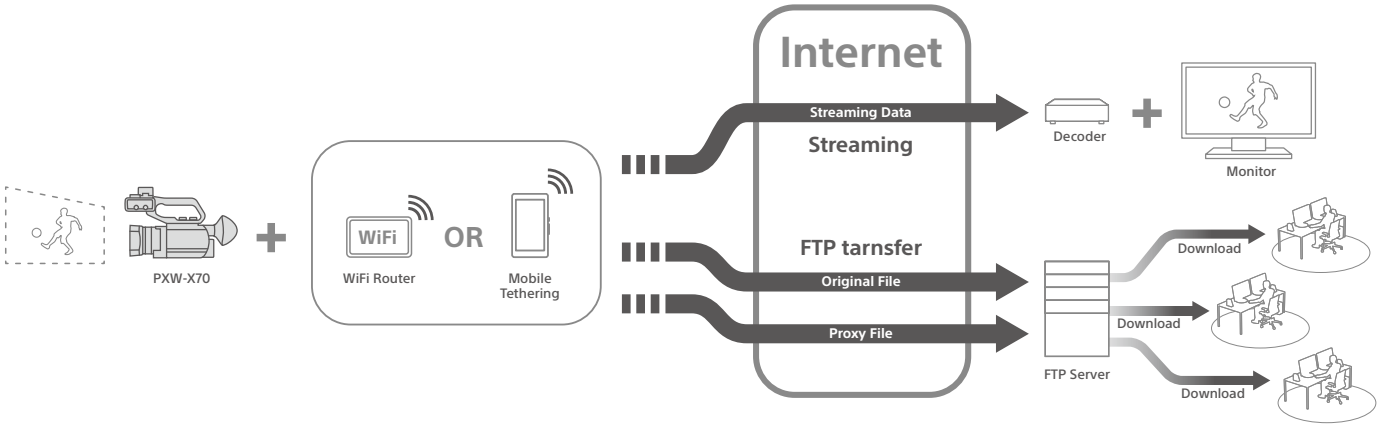


New Streaming

This feature allows images to be streamed live from the PXW-X70 for viewing at a remote location. Data transfer rate, specified by two image quality menu settings (1280 x 720p and 640 x 360p), can be selected to suit the network environment being used.

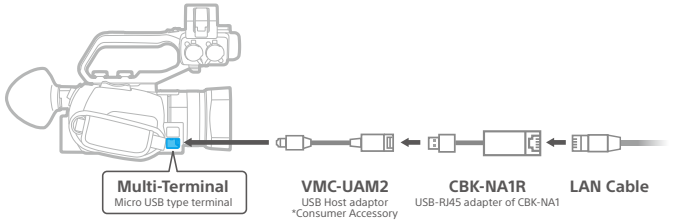
New FTP Transfer

This feature supports FTP file transfers on the PXW-X70, allowing content files recorded with the XAVC Proxy Recording feature and other content files shot in XAVC (4K/HD) and AVCHD formats to be sent over the Internet for remote storage on an FTP server.



New Wired LAN Connection

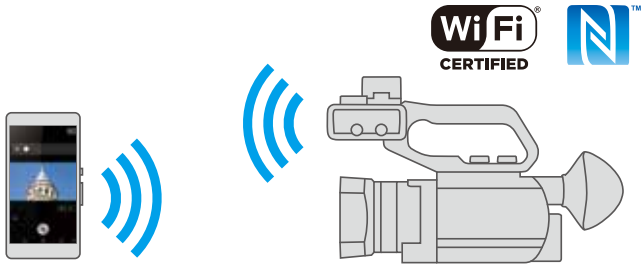
When wireless LAN is unavailable, this feature allows the PXW-X70 to be connected to the Internet over a wired connection via separately available USB adapter cable "VMC-UAM2" and Network adaptor kit "CBK-NA1R", allowing files to be streamed or transferred by FTP



Wi-Fi and Wireless Functions for Remote Control

A Content Browser Mobile* app enables confirmation of the angle of each shot before shooting, remote monitoring, and remote operation of the camcorder (field angle/white balance/iris, etc.). Near Field Communication (NFC) functions allow easy, one-touch wireless LAN connection to a smartphone or tablet.

* The Content Browser Mobile smartphone app can be downloaded from the Google Play Store or Apple App Store.



Four Position (clear, 1/4, 1/16, 1/64) Switchable ND Filter

The camcorder includes an advanced ND filter that facilitates shooting techniques such as the use of a slow shutter and iris adjustment in daylight and other bright conditions, providing fine aperture control with a standard four-position switch from Clear to 1/64 ND.

Compatibility with HDMI* and 3G-SDI Output

Professional interfaces such as a 3G-SDI output terminal allow image signals to be transferred at up to HD1080 60p through a single BNC cable. HDMI output in the native format is possible while transmitting progressive signals without any pull-down. It also offers convenient external recording with embedded timecode and REC trigger.

* Output during 4K recording mode is not available.

3.5-type LCD Panel and 0.39-type OLED Viewfinder

The PXW-X70 features a 3.5-type touch panel LCD panel (1.56 million dots, 16:9) that provides easy viewing in a wide range of lighting conditions. Also, the high-resolution 0.39-type OLED viewfinder (1.44 million dots, 4:3) will offer crisp and bright view without any color breaking, making precise manual focusing easy.

Picture Profile Function for Image Parameter Adjustment

This feature allows adjustment of parameters that define image characteristics such as gamma curve, black level, and color level. Moreover, calibration of multiple cameras and tone control throughout entire recordings are possible. Picture Profile data and other recording settings can be stored on a SD card and a memory stick.

Compatible Accessories Attached to the Multi-Interface (MI) Shoe

A Multi-Interface shoe is equipped on PXW-X70. This MI shoe is used to connect the XLR handle unit. When the handle is detached, it can be used as a multi purpose intelligent shoe. For instance, power and audio connections for a UWP-D11 or UWP-D12 wireless microphone receiver are made via this shoe, minimizing the need for extra batteries and additional cabling.

Dual media slots, "Simul" or "Relay" recording, and independent recording control

Two media slots allow either simultaneous recording to two memory cards in the "Simul" mode, or "Relay" recording in which recording automatically switches to the second memory card when the first is full. The user can set up the two Start/Stop buttons on the PXW-X70, one on the XLR handle unit and one on the camcorder body, to independently start and stop recording on different memory cards while recording in Simul mode.

Specifications

	PXW-X70
General	
Mass	Approx 900 g (1 lb 15 oz) (body)
	Approx. 1400 g (3 lb 1 oz) (with lens hood, handle, eyecup, NP-FV70 battery)
Dimensions (W x H x D)*1	120.7 x 103.5 x 274.3 mm (4 7/8 x 4 1/8 x 10 7/8 inches) (With the accessories (lens hood, large eyecup), excluding the grip belt and including the projecting parts)
	130.3 x 180.9 x 287 mm (5 1/4 x 7 1/8 x 11 3/8 inches) (With the accessories (lens hood, large eyecup, XLR handle unit), excluding the grip belt and including the projecting parts)
Power Requirements	DC In: 8.4 V, Battery: 6.8 V / 7.2 V
Power Consumption	Approx. 5.5 W (while recording with viewfinder and XAVC HD 1080/60i 50 Mbps)
	Approx. 5.8 W (while recording with LCD and XAVC HD 1080/60i 50 Mbps)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to +60°C (-4°F to +140°F)
Battery Operating Time	Approx. 120 min. with NP-FV70 battery (while recording with LCD, XAVC 1080/60i, 50 Mbps)
	Approx. 200 min. with NP-FV70 battery (while playing with LCD, XAVC 1080/60i, 50 Mbps)
Recording Format (Video)	XAVC QFHD: MPEG-4 AVC/H.264 4:2:0 Long profile
	XAVC HD: MPEG-4 AVC/H.264 4:2:2 Long profile
	XAVC Proxy: MPEG-4 AVC/H.264 4:2:0 Long profile
	AVCHD: MPEG-4 AVC/H.264 AVCHD 2.0 format compatible
	DV
Recording Format (Audio)	XAVC QFHD: Linear PCM 2ch, 24-bit, 48 kHz
	XAVC HD: Linear PCM 2ch, 24-bit, 48 kHz
	XAVC Proxy: AAC-LC 2ch, 24-bit,48 kHz
	AVCHD: Linear PCM 2ch, 16-bit, 48 kHz / Dolby Digital 2ch, 16-bit, 48 kHz
	DV: Linear PCM 2ch, 16-bit, 48 kHz
Recording Frame Rate	XAVC QFHD (3840 x 2160)@29.97p, 25p, 23.98p, 60Mbps
	XAVC HD (1920 x 1080)@59.94p, 50p, 50 Mbps/35 Mbps
	XAVC HD (1920 x 1080)@59.94i, 50i, 50 Mbps/35 Mbps/25 Mbps
	XAVC HD (1920 x 1080)@29.97p, 25p, 23.98p, 50 Mbps/35 Mbps
	XAVC HD (1280 x 720)@59.94p, 50p, 50 Mbps
	XAVC Proxy (1280 x 720)@59.94p, 50p, 29.97p, 25p, 23.98p, 9Mbps
	XAVC Proxy (1280 x 720)@59.94p, 50p, 29.97p, 25p, 23.98p, 3Mbps
	AVCHD (1920 x 1080)@59.94p, 50p, PS mode (28 Mbps)
	AVCHD (1920 x 1080)@59.94i/50i/29.97p/25p/23.98p, FX mode (24 Mbps), FH mode(17 Mbps)
	AVCHD (1280 x 720)@59.94p, 50p, FX mode (24 Mbps), FH mode (17 Mbps), HQ mode (9 Mbps)
	DV (720 x 480) @59.94i, 25 Mbps
	DV (720 x 576) @50i, 25 Mbps
Recording/Playback Time	XAVC QFHD@LPCM 2ch 60 Mbps Approx. 100 min with 64 GB memory card
	XAVC HD@LPCM 2ch 35 Mbps Approx. 170 min with 64 GB memory card
	XAVC HD@LPCM 2ch 25 Mbps Approx. 220 min with 64 GB memory card
	AVCHD@LPCM 2ch PS Mode Approx. 290 min with 64 GB memory card Approx. 145 min with 32 GB memory card
	AVCHD@LPCM 2ch FX Mode Approx. 340 min with 64 GB memory card Approx. 170 min with 32 GB memory card
	AVCHD@LPCM 2ch FH Mode Approx. 450 min with 64 GB memory card Approx. 225 min with 32 GB memory card
	DV Approx. 280 min with 64 GB memory card Approx. 140 min with 32 GB memory card
Lens	
Lens Mount	Fixed
Zoom Ratio	12x (optical), servo

	PXW-X70
Focal Length	f = 9.3 - 111.6 mm equivalent to f = 29.0 - 348.0 mm on 35 mm lens (16:9) equivalent to f = 35.5 - 426.0 mm on 35 mm lens (4:3)
Iris	F2.8 - F4.5 auto/manual selectable
Focus	AF/MF selectable, 10 mm to ∞ (Wide), 1000 mm to ∞ (Tele)
Image Stabilizer	ON/OFF selectable, shift lens
Filter Diameter	M62 mm
Camera Section	
Imaging Device (Type)	1.0-type (13.2 mm x 8.8 mm) back-illuminated Exmor R CMOS sensor
Effective Picture Elements	Approx. 14.2 M pixels (16:9)/Approx. 10.6 M pixels (4:3)
Built-in Optical Filters	OFF: Clear, 1: 1/4ND, 2: 1/16ND, 3: 1/64ND
Minimum Illumination	*2 [60i] 3 lux (1/60 Shutter Speed, iris/gain AUTO) *3 [50i] 3 lux (1/50 Shutter Speed, iris/gain AUTO)
	*2 [60i] 1.7 lux (1/30 Shutter Speed, iris/gain AUTO) *3 [50i] 1.7 lux (1/25 Shutter Speed, iris/gain AUTO)
Shutter Speed	*2 [60i]: 1/8 - 1/10,000 (1/6 - 1/10,000 when shooting with 24p) *3 [50i]: 1/6 -1/10,000
Slow & Quick Motion Function	*2 [60i]: 1080p: Frame rate selectable 1.2.4.8.15.30,60 fps
	*3 [50i]: 1080p: Frame rate selectable 1.2.3.6.12.25,50 fps
White Balance	Preset (Indoor: 3200K, Outdoor: 5600K±7 steps, Color temparature set range: 2300-15000K), Onepush A, B, Auto selectable
Gain	-3, 0, 3, 6, 9, 12,15, 18, 21, 24, 27, 30, 33 dB, AGC
Gamma Curve	Selectable
Input/Output	
Audio Input	XLR-type 3-pin (female) (x2), line/mic/mic +48 V selectable
Video Output	Integrated into Multi/Micro USB jack (x1), Composite 1.0Vp-p, 75 Ω
Audio Output	Integrated into Multi/Micro USB jack
SDI Output	BNC (x1), 3G/HD/SD SMPTE 424M/292M/259M standards
USB	Multi/Micro USB jack (x1)
Headphone Output	Stereo mini jack (x1)
Speaker Output	Monaural
DC Input	DC jack
Remote	Integrated into Multi/Micro USB jack
HDMI Output	Type A (x1)
Monitoring	
Viewfinder	1.0 cm (0.39 type) OLED Approx. 1.44 M dots
LCD	8.8 cm (3.5 type) Approx. 1.56 M dots.
Built-in Microphone	
	Omni-directional stereo electret condenser microphone.
Media	
Type	Memory Stick Pro Duo™ and SD/SDHC/SDXC compatible (x1), SD/SDHC/SDXC (x1)
Wi-Fi/NFC	
Supported Format	IEEE 802.11 b/g/n
Frequency Band	2.4 GHz bandwidth
Security	WEP/WPA-PSK/WPA2-PSK
NFC	NFC Forum Type 3 Tag compliant
Streaming	MPEG-2 TS/UDP
FTP	FTP, FTPS
Supplied Accessories	
	XLR handle unit (1), Lens hood (1), Lens cap (1), Large eyecup (1), Accessory shoe kit (1), USB cable (1), Rechargeable battery pack (NP-FV70) (1), AC Adaptor (AC-L200D) (1), Power cord (mains lead) (1), Wireless Remote Commander (RMT-845) (1), Lithium battery (CR2025 for the Wireless Remote Commander) (1), Pre-installed to the Wireless Remote Commander, Operating Guide (3), CD-ROM "Manuals for Solid-State Memory Camcorder" (1), Warranty (1)

*1 The values for dimensions are approximate.
*2 [60i]: when [60i/50i SEL] is set to 60i
*3 [50i]: when [60i/50i SEL] is set to 50i

Available Accessories

NP-FV70
(6.8 V / 14.0 Wh / 2060 mAh)
NP-FV100
(6.8 V / 26.5 Wh / 3900 mAh)
Rechargeable Battery Pack

AC-VQV10
(AC 100 V – 240 V)
AC Adaptor/Charger

UWP-D11/UWP-D12
Wireless Microphone Package

SMAD-P3
MI Shoe Mount Adaptor
* required for cable-free operation with UWP-D11/UWP-D12

ECM-VG1
Electret Condenser Microphone

ECM-MS2
Electret Condenser Microphone

ECM-673
Electret Condenser Microphone

SF-128UX2
(128 GB, 64 GB, 32 GB)
SDXC Memory Card

CBK-NA1
Network Adapter KIT

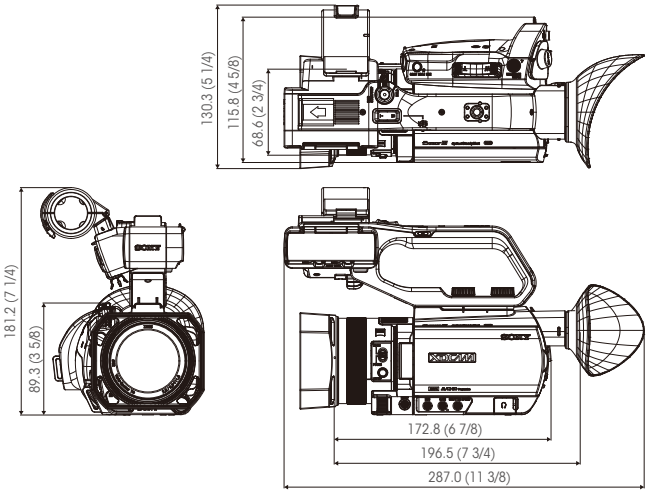
PMW-PZ1
4K Memory Player

RM-VPR1
Remote Commander

VMC-UAM2
USB Adapter Cable

ECM-W1M
MI Shoe Wireless Microphone
*5.1ch MIX mode is not available

Dimensions



Unit: mm (inches)

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